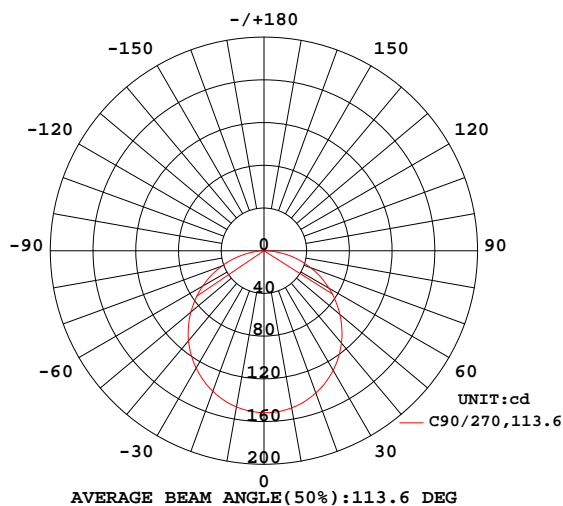


LUMINAIRE PHOTOMETRIC TEST REPORT

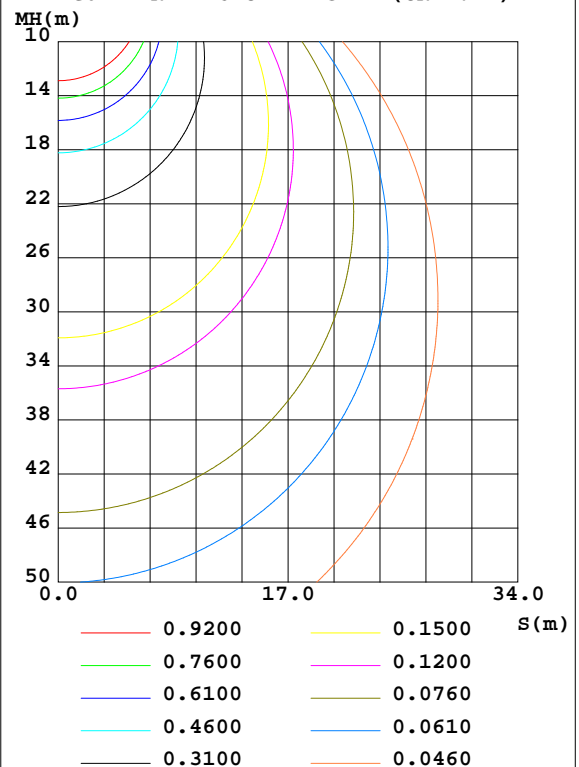
NAME: C-SFR-F2219S8-VB-24CC-22K-57K-WM-192-80-15W-125-57K	WEIGHT: 0.570kg/m
SPEC.:	SERIAL No.:
MFR.: CLEAR	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 59.23 lm/W			
MODEL	3015	Imax(cd)	153.0	S/MH(C0/180)	1.26
NOMINAL POWER(W)	15	LOR(%)	98.8	S/MH(C90/270)	1.25
RATED VOLTAGE(V)	24	TOTAL FLUX(lm)	449.87	$\eta$ UP,DN(C0-180)	0.3,49.8
NOMINAL FLUX(lm)	455.12	CIE CLASS	DIRECT	$\eta$ UP,DN(C180-360)	0.3,48.4
LAMPS INSIDE	1	$\eta$ up(%)	0.6	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	24	$\eta$ down(%)	98.2	CIBSE SHR MAX	1.35

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG  
C Interval: 30.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:Dillon  
Test Date:29 July 2021

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 2.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.00.446  
Humidity:65.0%  
Test Distance:6.950m [K=1.0000]  
Remarks:

## ZONAL FLUX DIAGRAM

### ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	150.1	150.1	149.4	150.5	150.3	149.7	148.5	150.0	0- 10	14.44	14.44	3.21,3.17
20	142.1	142.6	141.9	142.8	142.4	141.6	140.1	141.7	10- 20	41.37	55.81	12.4,12.3
30	129.3	130.2	129.5	130.2	129.5	128.6	127.0	128.7	20- 30	62.75	118.6	26.4,26
40	112.3	113.6	112.8	113.3	112.5	111.5	110.0	111.7	30- 40	75.84	194.4	43.2,42.7
50	91.92	93.51	92.78	93.15	92.34	91.13	89.42	91.25	40- 50	79.10	273.5	60.8,60.1
60	69.02	70.91	70.45	70.53	69.59	68.13	66.33	68.18	50- 60	72.29	345.8	76.9,76
70	44.55	46.68	46.66	46.37	45.26	43.70	42.12	43.69	60- 70	56.61	402.4	89.4,88.4
80	19.41	21.84	22.31	21.59	20.15	18.84	17.63	18.72	70- 80	34.31	436.7	97.1,96
90	0.4245	2.280	3.141	2.352	0.9348	1.411	1.390	1.363	80- 90	10.24	446.9	99.4,98.2
100	0.2216	0.6093	0.6349	0.7093	0.8728	0.6704	0.3702	0.5231	90-100	0.9464	447.9	99.6,98.4
110	0.2890	0.2824	0.0000	0.3594	0.8456	0.4053	0.0625	0.2581	100-110	0.4687	448.4	99.7,98.5
120	0.4052	0.3363	0.0351	0.3661	0.7755	0.3797	0.0136	0.2878	110-120	0.3197	448.7	99.7,98.6
130	0.4567	0.3756	0.0784	0.3756	0.6997	0.4027	0.0757	0.3472	120-130	0.3104	449.0	99.8,98.7
140	0.4809	0.4202	0.1298	0.3879	0.6242	0.4013	0.1458	0.3377	130-140	0.2857	449.3	99.9,98.7
150	0.4891	0.4418	0.2404	0.3945	0.5566	0.4134	0.2296	0.3445	140-150	0.2386	449.5	99.9,98.8
160	0.4810	0.4419	0.3297	0.4081	0.4809	0.4229	0.3349	0.3904	150-160	0.1852	449.7	100,98.8
170	0.4730	0.4782	0.4000	0.4391	0.4594	0.4459	0.4241	0.4149	160-170	0.1214	449.8	100,98.8
180	0.4458	0.4567	0.4783	0.4404	0.4540	0.4553	0.4972	0.4445	170-180	0.0437	449.9	100,98.8
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

Conical surface Flux(90deg): 242.12 lm

%lum = 53.8%

%lamp = 53.2%

Conical surface Flux(120deg): 345.79 lm

%lum = 76.9%

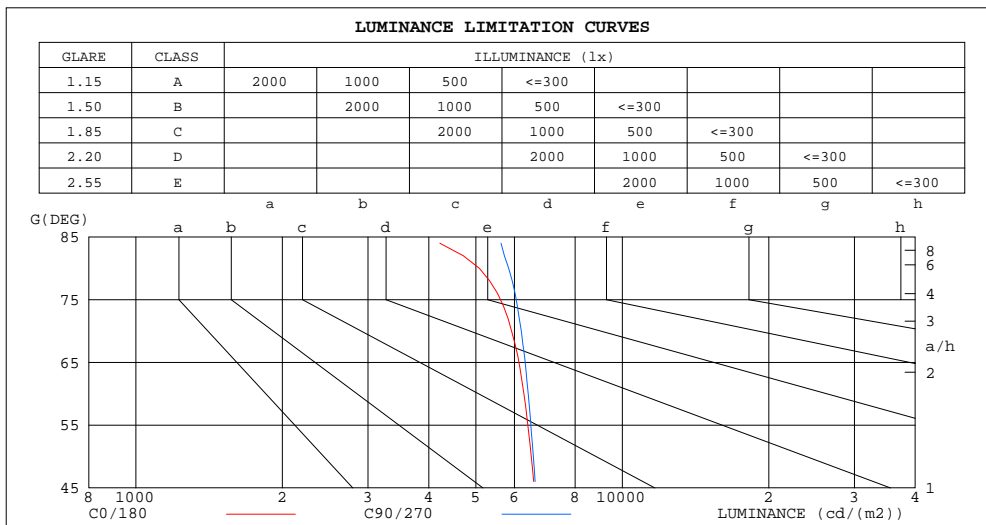
%lamp = 76.0%

C Range: 0 - 360DEG  
 C Interval: 30.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:Dillon  
 Test Date:29 July 2021

γ Range: 0 - 180DEG  
 γ Interval: 2.0DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.00.446  
 Humidity:65.0%  
 Test Distance:6.950m [K=1.0000]  
 Remarks:

## LUMINANCE LIMITATION CURVES

NAME: C-SFR-F2219S8-VB-24CC-22K-57K-WM-192-80-15W-125B57K	WEIGHT: 0.570kg/m
SPEC.:	DIM.: 22*19mm
MFR.: CLEAR	SUR.: 22*1000mm
	Shielding Angle:



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	5056	6754
80	5082	5840
75	6066	6480
70	5921	6201
65	6393	6569
60	6274	6405
55	6576	6660
50	6500	6561
45	6722	6759

C Range: 0 - 360DEG  
C Interval: 30.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: Dillon  
Test Date: 29 July 2021

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 2.0DEG  
Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.00.446  
Humidity: 65.0%  
Test Distance: 6.950m [K=1.0000]  
Remarks:

## WEC AND CCEC

NAME: C-SFR-F2219S8-VB-24CC-22K-57K-WM-192-80-15W-T25B57K	WEIGHT: 0.570kg/m
SPEC.:	SERIAL No.:
MFR.: CLEAR	Shielding Angle:

pcc	80%			70%			50%			30%			10%			0	
ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0	
ρfc	20%			20%			20%			20%			20%			0	
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients(WEC)										
0.0																	
1.0	.314	.179	.057	.307	.175	.056	.294	.168	.054	.281	.162	.052	.270	.156	.050		
2.0	.294	.161	.049	.288	.158	.049	.276	.153	.048	.265	.148	.046	.254	.144	.045		
3.0	.271	.144	.043	.265	.142	.043	.255	.138	.042	.245	.134	.041	.236	.131	.040		
4.0	.249	.130	.038	.244	.128	.038	.235	.125	.037	.226	.121	.037	.218	.118	.036		
5.0	.230	.117	.034	.226	.116	.034	.217	.113	.033	.209	.111	.033	.202	.108	.032		
6.0	.213	.107	.031	.209	.106	.030	.202	.103	.030	.195	.101	.030	.188	.099	.029		
7.0	.198	.098	.028	.194	.097	.028	.188	.095	.027	.182	.093	.027	.176	.091	.027		
8.0	.185	.090	.025	.182	.089	.025	.176	.088	.025	.170	.086	.025	.165	.085	.025		
9.0	.173	.084	.023	.170	.083	.023	.165	.081	.023	.160	.080	.023	.155	.079	.023		
10.0	.163	.078	.022	.160	.077	.022	.155	.076	.021	.151	.075	.021	.146	.074	.021		

ρcc	80%			70%			50%			30%			10%			0
ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Ceiling Cavity Exitance Coefficients(CCEC)									
0.0	.193	.193	.193	.165	.165	.165	.113	.113	.113	.065	.065	.065	.021	.021	.021	
1.0	.184	.159	.137	.157	.137	.118	.108	.094	.082	.062	.054	.047	.020	.018	.015	
2.0	.176	.135	.101	.151	.116	.087	.103	.081	.061	.060	.047	.036	.019	.015	.012	
3.0	.168	.118	.078	.144	.102	.067	.099	.071	.047	.057	.041	.028	.018	.013	.009	
4.0	.161	.105	.062	.138	.091	.054	.095	.063	.038	.055	.037	.023	.018	.012	.007	
5.0	.153	.095	.051	.132	.082	.045	.091	.057	.032	.053	.034	.019	.017	.011	.006	
6.0	.146	.086	.043	.126	.075	.038	.087	.052	.027	.050	.031	.016	.016	.010	.005	
7.0	.139	.080	.038	.120	.069	.033	.083	.048	.023	.048	.029	.014	.016	.009	.005	
8.0	.133	.074	.033	.115	.064	.029	.079	.045	.021	.046	.027	.012	.015	.009	.004	
9.0	.127	.069	.030	.109	.060	.026	.076	.042	.018	.044	.025	.011	.014	.008	.004	
10.0	.121	.065	.027	.105	.056	.024	.073	.040	.017	.042	.023	.010	.014	.008	.003	

C Range: 0 - 360DEG  
C Interval: 30.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:Dillon  
Test Date:29 July 2021

γ Range: 0 - 180DEG  
γ Interval: 2.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.00.446  
Humidity:65.0%  
Test Distance:6.950m [K=1.0000]  
Remarks:

## UGR(Unified Glare Rating) Table

NAME: C-SFR-F2219S8-VB-24CC-22K-57K-WM-192-80-15W-T25B57K					WEIGHT: 0.570kg/m				
SPEC.:					DIM.: 22*19mm				
MFR.: CLEAR					SUR.: 22*1000mm				
ceiling/cavity					0.7	0.7	0.5	0.5	0.3
walls					0.5	0.3	0.5	0.3	0.3
working plane					0.2	0.2	0.2	0.2	0.2
Room dimensions					Viewed crosswise				
x = 2H y = 2H					22.1	23.6	22.4	23.9	24.1
3H					23.7	25.1	24.0	25.4	25.6
4H					24.4	25.7	24.7	26.0	26.3
6H					24.9	26.1	25.2	26.4	26.7
8H					25.0	26.2	25.4	26.5	26.8
12H					25.1	26.3	25.4	26.6	26.9
4H 2H					22.8	24.1	23.1	24.4	24.7
3H					24.6	25.8	25.0	26.1	26.4
4H					25.4	26.5	25.8	26.8	27.2
6H					26.0	27.0	26.4	27.3	27.7
8H					26.2	27.1	26.6	27.5	27.9
12H					26.3	27.1	26.8	27.5	28.0
8H 4H					25.7	26.6	26.2	27.0	27.4
6H					26.5	27.3	27.0	27.7	28.1
8H					26.8	27.5	27.3	27.9	28.4
12H					27.0	27.6	27.5	28.0	28.5
12H 4H					25.8	26.6	26.2	27.0	27.4
6H					26.6	27.3	27.1	27.7	28.2
8H					27.0	27.5	27.4	28.0	28.5
Viewed endwise					22.2	23.7	22.5	23.9	24.1
23.9					25.3	24.2	25.5	25.8	25.8
24.6					25.9	24.9	26.2	26.5	26.5
25.1					26.4	25.5	26.7	27.0	27.0
25.3					26.6	25.7	26.9	27.2	27.2
25.5					26.7	25.8	27.0	27.3	27.3
22.8					24.2	23.2	24.4	24.7	24.7
24.7					25.9	25.1	26.2	26.5	26.5
25.6					26.6	26.0	27.0	27.3	27.3
26.3					27.2	26.7	27.6	28.0	28.0
26.5					27.4	27.0	27.8	28.2	28.2
26.7					27.5	27.2	27.9	28.4	28.4
25.9					26.8	26.3	27.2	27.6	27.6
26.8					27.5	27.2	27.9	28.4	28.4
27.1					27.8	27.6	28.2	28.7	28.7
27.4					28.0	27.9	28.4	28.9	28.9
25.9					26.7	26.3	27.1	27.5	27.5
26.8					27.5	27.3	27.9	28.4	28.4
27.2					27.8	27.7	28.3	28.8	28.8
Variations with the observer position at spacings(CIE Pub.117):									
S = 1.0H					+ 0.1 / - 0.2				
1.5H					+ 0.2 / - 0.3				
2.0H					+ 0.1 / - 0.3				

CIE Pub.117, 455.1 lm Total Lamp Luminous Flux Correct (8log(F/F0) = -2.7)  
Area: 0.022 m2

C Range: 0 - 360DEG  
C Interval: 30.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:Dillon  
Test Date:29 July 2021

γ Range: 0 - 180DEG  
γ Interval: 2.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.00.446  
Humidity:65.0%  
Test Distance:6.950m [K=1.0000]  
Remarks:

### UTILIZATION FACTORS TABLE

NAME: C-SFR-F2219S8-VB-24CC-22K-57K-WM-192-80-15W-125B57K	WEIGHT: 0.570kg/m
SPEC.:	SERIAL No.:
MFR.: CLEAR	Shielding Angle:

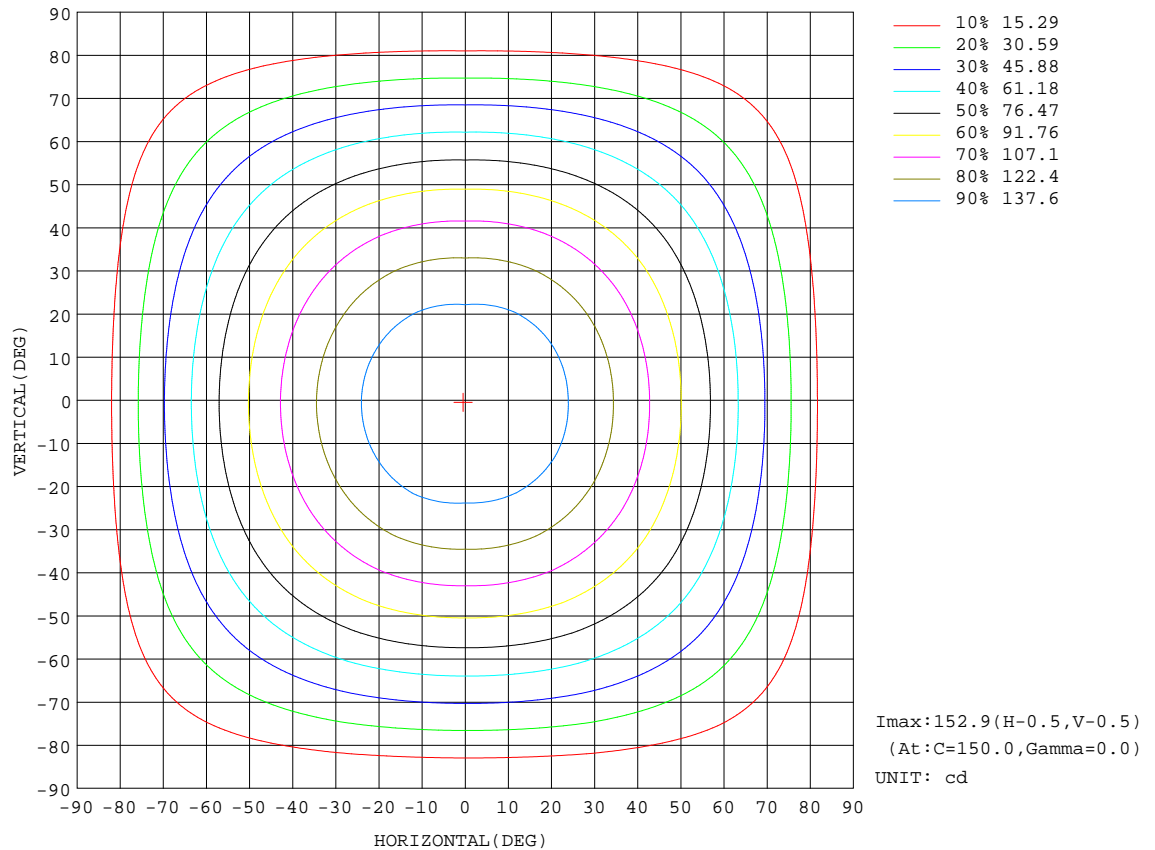
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	56	45	38	55	44	37	54	44	37	31
0.80	66	54	47	65	54	47	63	53	46	39
1.00	74	63	56	73	62	55	71	64	55	48
1.25	81	71	63	80	70	63	77	68	62	55
1.50	86	76	69	84	75	69	81	73	68	60
2.00	93	84	78	91	83	77	88	81	76	68
2.50	97	89	83	95	88	82	91	85	80	72
3.00	100	93	88	98	92	87	94	89	84	76
4.00	104	99	94	102	97	92	98	93	90	81
5.00	107	102	98	104	100	96	100	96	93	84
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004										
Suspended										
SHRNOM = 1.25										

C Range: 0 - 360DEG  
C Interval: 30.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:Dillon  
Test Date:29 July 2021

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 2.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.00.446  
Humidity:65.0%  
Test Distance:6.950m [K=1.0000]  
Remarks:

**ISOCANDELA DIAGRAM**

NAME: C-SFR-F2219S8-VB-24CC-22K-57K-WM-192-80-15W-125B57K	WEIGHT: 0.570kg/m
SPEC.:	SERIAL No.:
MFR.: CLEAR	Shielding Angle:



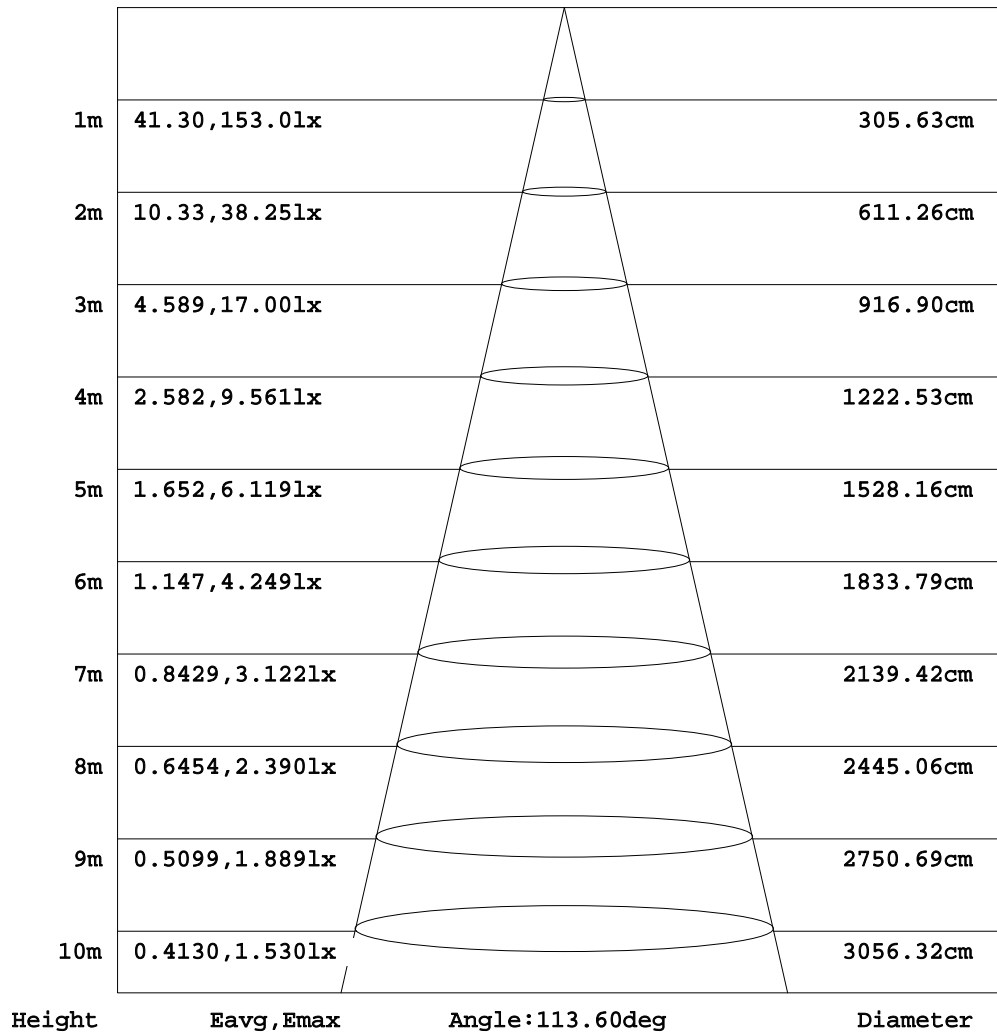
C Range: 0 - 360DEG  
 C Interval: 30.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:Dillon  
 Test Date:29 July 2021

γ Range: 0 - 180DEG  
 γ Interval: 2.0DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.00.446  
 Humidity:65.0%  
 Test Distance:6.950m [K=1.0000]  
 Remarks:

### AAI Figure

NAME: C-SFR-F2219S8-VB-24CC-22K-57K-WM-192-80-15W-125B57K	WEIGHT: 0.570kg/m
SPEC.:	SERIAL No.:
MFR.: CLEAR	Shielding Angle:

Flux out:332.3 lm



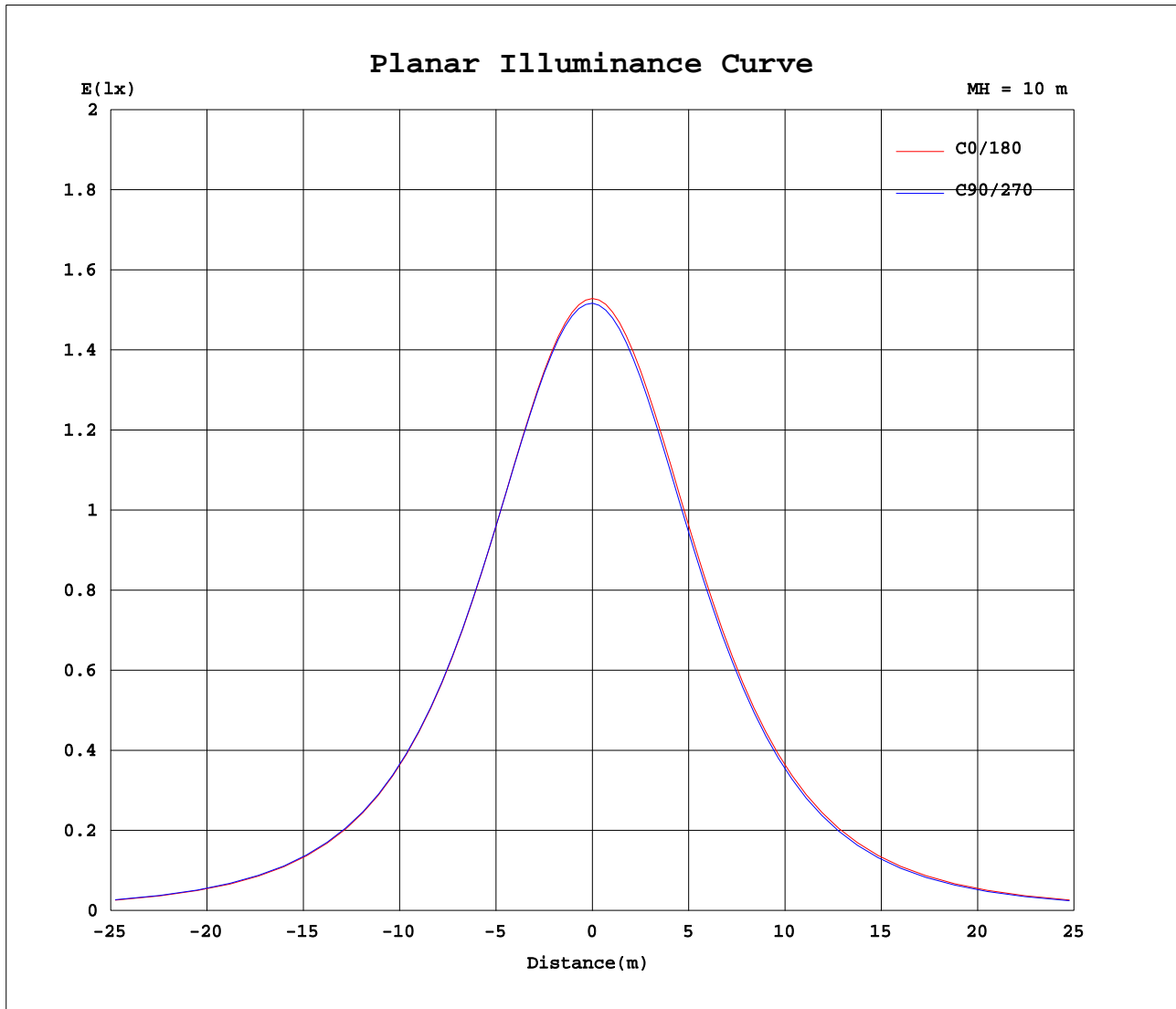
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
 C Interval: 30.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: Dillon  
 Test Date: 29 July 2021

γ Range: 0 - 180DEG  
 γ Interval: 2.0DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.00.446  
 Humidity: 65.0%  
 Test Distance: 6.950m [K=1.0000]  
 Remarks:



### Planar Illuminance Curve



C Range: 0 - 360DEG  
 C Interval: 30.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: Dillon  
 Test Date: 29 July 2021

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 2.0DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.00.446  
 Humidity: 65.0%  
 Test Distance: 6.950m [K=1.0000]  
 Remarks:

## LUMINOUS DISTRIBUTION INTENSITY DATA

NAME: C-SFR-F2219S8-VB-24CC-22K-57K-WM-192-80-15W-T25B57K	WEIGHT: 0.570kg/m
SPEC.:	SERIAL No.:
MFR.: CLEAR	Shielding Angle:

Table--1

UNIT: cd

C(DEC)	0	30	60	90	120	150	180	210	240	270	300	330							
γ (DEC)																			
0	153	153	152	152	153	153	153	153	152	152	153	153							
5	152	153	152	151	153	153	153	152	152	151	152	152							
10	150	150	150	149	151	150	150	150	149	148	150	150							
15	148	148	147	147	148	148	148	147	147	146	147	147							
20	142	143	143	142	143	143	142	142	141	140	141	142							
25	138	138	138	137	138	138	138	137	137	135	137	137							
30	129	130	130	129	130	130	130	129	128	127	128	129							
35	123	124	124	123	124	124	123	122	122	121	122	123							
40	112	113	114	113	114	113	113	112	111	110	111	112							
45	105	106	106	105	106	105	105	104	103	102	104	104							
50	91.9	93.3	93.8	92.8	93.5	92.8	92.3	91.5	90.8	89.4	90.8	91.7							
55	83.0	84.4	85.0	84.0	84.6	84.0	83.5	82.6	81.8	80.4	81.8	82.8							
60	69.0	70.6	71.2	70.5	70.8	70.2	69.6	68.6	67.7	66.3	67.7	68.7							
65	59.4	61.1	61.7	61.1	61.4	60.7	60.0	59.0	58.0	56.7	57.9	59.0							
70	44.6	46.3	47.1	46.7	46.7	46.0	45.3	44.2	43.2	42.1	43.2	44.2							
75	34.5	36.3	37.3	36.9	36.9	36.0	35.1	34.1	33.2	32.3	33.2	34.1							
80	19.4	21.3	22.4	22.3	22.1	21.1	20.2	19.2	18.5	17.6	18.4	19.0							
85	9.69	11.7	12.9	13.0	12.6	11.5	10.4	9.64	9.28	8.73	9.26	9.50							
90	0.42	1.65	2.91	3.14	2.87	1.84	0.93	1.28	1.54	1.39	1.57	1.15							
95	0.28	0.77	0.99	0.82	0.98	1.02	0.89	0.93	0.79	0.47	0.76	0.67							
100	0.22	0.35	0.87	0.63	0.83	0.59	0.87	0.69	0.65	0.37	0.65	0.39							
105	0.23	0.33	0.42	0.51	0.43	0.57	0.88	0.62	0.56	0.33	0.57	0.34							
110	0.29	0.36	0.21	0.00	0.16	0.56	0.85	0.61	0.20	0.06	0.20	0.32							
115	0.35	0.37	0.22	0.03	0.17	0.55	0.82	0.60	0.20	0.00	0.21	0.35							
120	0.41	0.42	0.25	0.04	0.17	0.56	0.78	0.57	0.19	0.01	0.23	0.35							
125	0.44	0.42	0.26	0.05	0.19	0.56	0.75	0.55	0.22	0.05	0.24	0.39							
130	0.46	0.44	0.31	0.08	0.23	0.52	0.70	0.55	0.25	0.08	0.27	0.42							
135	0.47	0.46	0.32	0.10	0.27	0.51	0.66	0.52	0.26	0.11	0.27	0.42							
140	0.48	0.47	0.37	0.13	0.28	0.50	0.62	0.50	0.31	0.15	0.24	0.44							
145	0.48	0.46	0.37	0.18	0.30	0.48	0.60	0.50	0.32	0.17	0.22	0.43							
150	0.49	0.49	0.39	0.24	0.33	0.46	0.56	0.48	0.34	0.23	0.23	0.46							
155	0.48	0.49	0.41	0.26	0.38	0.46	0.52	0.46	0.35	0.25	0.27	0.45							
160	0.48	0.46	0.42	0.33	0.39	0.42	0.48	0.45	0.40	0.33	0.32	0.46							
165	0.48	0.48	0.44	0.36	0.43	0.42	0.48	0.46	0.42	0.37	0.33	0.46							
170	0.47	0.48	0.47	0.40	0.45	0.42	0.46	0.44	0.45	0.42	0.36	0.47							
175	0.49	0.50	0.46	0.44	0.46	0.46	0.47	0.49	0.49	0.45	0.42	0.48							
180	0.45	0.45	0.46	0.48	0.44	0.45	0.45	0.45	0.46	0.50	0.43	0.46							

C Range: 0 - 360DEG

C Interval: 30.0DEG

Test Speed: HIGH

Temperature:25.3DEG

Operators:Dillon

Test Date:29 July 2021

γ Range: 0 - 180DEG

γ Interval: 2.0DEG

Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.00.446

Humidity:65.0%

Test Distance:6.950m [K=1.0000]

Remarks: